

## Solid State Relays

Solid state relays (SSR's) can be used in place of mechanical contactors and relays. SSR's are optically coupled, isolating control components from the high voltage of the load. SSR's turn on at zero volts and turn off at zero current, eliminating spikes that cause electrical noise (RFI). Since there are no moving mechanical parts, solid state relays are noiseless, can switch as fast as several times per second and still have a life and reliability many times that of mechanical devices.



Figure 1 SSR

**TABLE 1 Solid State Relays - Zero Switching**

Current* Rating	Load Voltage	Control Signal	Catalog Number
10 Amp	120 - 240 VAC	3-32 VDC	RA2410-D06T
25 Amp	120 - 240 VAC		RA2425-D06T
10 Amp	120 - 480 VAC		RA4810-D12
25 Amp	120 - 480 VAC		RA4825-D12
50 Amp	120 - 600 VAC	4.5-32 VDC	RA6050-D16
90 Amp			RA6090-D16
10 Amp	120 - 480 VAC MAX	120-240 VAC	RA4810-HA12
25 Amp			RA4825-HA12
50 Amp			RA4850-HA12

**Note:**

\*For 25°C (77°F) Ambient

**TABLE 2 Solid State Relays - Phase Angle**

Current* Rating	Load Voltage	Control Signal	Catalog Number
50 Amp	240 VAC	4-20 mA	RE2450-AA06
50 Amp	480 VAC		RE4850-AA12
50 Amp	600 VAC		RE6050-AA16

**Note:**

\*For 25°C (77°F) Ambient

An SSR has a small voltage drop when conducting. The resulting heat generated must be dissipated by means of a heatsink. Many styles and ratings are available.



Figure 2 - HE-54 Heat Sink

Current rating for SSR's must be derated depending on ambient temperature and type of heat sink. The HE-54 can handle a single relay up to 50 Amps. Check with factory for design assistance.

## Solid State Relays & Definite Purpose Contactors

## Definite Purpose Contactors

Contactors are required when the current or voltage conditions of the load to be switched exceed the ratings of the controller. Compact definite purpose contactors are ideal for controlling heating and air conditioning equipment.



Figure 3 Contactor With Enclosure



Figure 4 Open Style Contactor

**TABLE 3 - Dimensions - Figure 3**

Contactactor Size (amps)	Width		Depth		Height	
	in	mm	in	mm	in	mm
30	4 15/16	125	3 13/16	97	6 7/32	158
40 - 75	5 11/16	144	4 1/8	104	8 5/8	219
93 - 112	5 11/16	144	6 1/4	158	10 7/16	265

**TABLE 4 - Non-Inductive amps. - Coil Data**

No. of Poles	Nominal	On/Off Thermostat	Proportional Control or Input Control	VA Inrush	VA Holding	Catalog Number
2	30	24	20	35	8	41NB20BF
3	30	24	20			41NB30BF
2	40	32	24	52	6.2	42BF15BF
3	40	32	24			42BF35BF
2	50	40	30			42CF15BF
3	50	40	30	91	15.6	42CF35BF
2	63	50	40			42DF15BF
3	63	50	40			42DF35BF
2	75	60	48			42EF15BF
3	75	60	48	200	31	42EF35BF
2	93	75	60			42FF15BF
3	93	75	60			42FF35BF
2	112	90	72	200	31	42GF15BF
3	112	90	72			42GF35BF

**Note:**

The contactors listed above are Figure 3 enclosed models with 120V coils. For Figure 4 open contactors change 'B' to 'A': eg. 42CF35AF For 208 / 240V coils change 'F' to 'G': eg. 42CF35BG.

## To Order Specify

Quantity, catalog number, and control circuit voltage.